

**DETERMINANTS OF COMPUTER EDUCATION CURRICULUM  
IMPLEMENTATION: THE CASE OF JUNIOR SECONDARY SCHOOLS IN  
OSHIMILI NORTH AND OSHIMILI SOUTH LOCAL GOVERNMENT AREAS OF  
DELTA STATE**

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**Abstract**

*This work employed the quality and adequacy of the Computer Studies teachers and the amount and accessibility of the teaching resources used as the determinants of Computer Education Curriculum implementation in Junior Secondary Schools in Oshimili North and Oshimili South LGAs of Delta State. A total of one hundred and twenty (60) respondents formed the sample size of this work. The multi-stage sampling technique was deployed in selecting the samples. 60% of the sampled population was from private secondary schools, while 40% belonged to public secondary schools.*

*Meanwhile, 15% of the public schools investigated do not offer Computer Studies based on the Computer Studies teachers quality and adequacy questionnaire (CTQAQ) and teaching resources Checklist (TRC) were used for data collection. The result revealed that 100% were qualified Computer Studies teachers. However, about 70% of the subject teachers teach other subjects along with Computer Studies. Considering the teaching resources, 80% of the sampled schools have desktop Computers and 20.0% use laptops. Results also showed that 98% of the schools sampled use the latest edition of Computer studies textbook for teaching the subject.*

**Keywords:** Junior Secondary Schools Computer Education Curriculum, Computer Teachers' Adequacy, Accessible Teaching Resources, Curriculum Implementation, Computer Studies.

**Introduction**

The National Committee on Computer Education in Nigeria was established in 1987 to establish a computer-literate society in Nigeria by the middle of the 1990s and enable current schoolchildren to understand and utilize computers in future employment (Jegade, 2018). Nigeria has also recognized the value of ICTs in education, as seen by including computer courses in all levels of education, from primary to postsecondary. Having been included in school curricula, computer education is currently offered as a pre-vocational topic in junior secondary school (JSS) and as a vocational elective in senior secondary school (SSS). It suggests that any pupil who plans to register computer as a subject outside of exams should have received instruction utilizing the Computer Education curriculum. Properly implementing the computer education curriculum in all Nigerian schools, especially the primary and secondary ones, which form the cornerstone of any educational system, is the only way to ensure that computer education receives the attention it needs to flourish and remain competitive in this digital age. To achieve this, it is necessary to ensure proper improvement of computer studies in elementary and post primary schools in Nigeria. Ayogu (2018) asserts that computer study is expensive. To finance computer studies, many different funding methods must be implemented. Ayogu (2018) stressed, however, that it is generally accepted that curriculum implementation entails teachers, students, administrators, and guardians putting the planned curriculum into practice and interacting with the natural setting,

instructional materials, psychological environment, and social environment. Because evaluation permeates every step of the curriculum creation process, the level of implementation necessitates regular assessments. Learning more about the suitability and appropriateness of the materials chosen for instruction is possible. The teaching strategies used, the teaching resources, and the student's learning through evaluation feedback. Teachers employ various information and communication technologies (ICT) tools to aid training, including the web, PowerPoint, online networks, and other multimedia devices. The application of computers in teaching and learning is increasingly widely accepted. Jegede (2018) found that children who utilize computers at a young age, both at home and in school, have a favourable impact on society and the educational system. Jegede (2018) says it raises literacy levels, keeps kids informed, and improves academic performance. Adopting computers in schools would require strong backing from the business sector due to the procurement expense, as schools might not be able to purchase enough computers for all the students. Mangesi (2017) noted that Dennis Osadebay University has a unique information and communications technology (ICT) strategy that ensures students always have access to computers and the internet.

In the Lagos state, a study was conducted by Ayoderin (2019). The study looked into several topics, including the availability of computer resources in schools, budgetary and financial support for computer education, and qualified staff to teach computer education in schools. The study found that the absence of computer resources in schools was caused by financial and funding restrictions, a shortage of skilled labour, insufficient time allocated for computer classes in the timetable, and a supportive school community that should aid computer education.

Bamidele (2017) looked into the availability and calibre of teachers and the accessibility of information systems in the schools when examining how the computer education curriculum was implemented in public secondary schools in Ekiti. The study's findings confirmed that computer science teachers were in the schools. Still, there were no computers, and they also demonstrated how little of the curriculum was implemented in the state schools. Additionally, it was found that the state's stakeholders have a negative attitude toward the application of the curriculum. It was discovered that many schools in Nigeria don't have modern computers, and those that do frequently have limited or no access to power. It is concerning that most schools that teach computers as a topic have theoretical understanding without practical application.

In an interview with Vanguard Learning, Jegede (2018) claimed, "Computer education should not only be the job of the computer instructor but of every teacher. Applying the social learning theory and comprehending that kids learn via ongoing practice are important. Inculcating computer skills through the usage of computers by the teachers would be a preferable approach. Several factors influence the ICT adoption rate and its uses in secondary schools. According to Adomi and Kpangan, in 2019, these variables include a lacklustre information infrastructure, inadequate facilities, unsteady energy supplies, a deficient integration and implementation of computer curriculum, and a lacklustre usage of Policy objectives. Others include a lack of staff to teach ICT courses, poor administration, and teachers' attitudes toward changes brought forth by the use of ICT. The Federal Ministry of Education introduced the school web as an ICT-driven initiative to outfit all schools with ICT equipment. (Adomi 2017). According to a finding by Aboi (2019), there are not enough computers for every student, the government has not provided funding

that has been encouraging, the computer education curriculum is unpopular with students and parents and is therefore rarely used, and teachers lack the skills necessary. It has been shown that teachers struggle to use computers and carry out fundamental computing tasks, which makes it difficult for them.

On teachers' ICT proficiency in Ghana, Muka (2019) discovered that instructors lacked computer literacy since they had no exposure. Most of them lacked formal ICT training; few had computer diplomas, but none had degrees. The cited causes include a lack of suitable computer hardware, awareness regarding how to utilize ICTs in classrooms fully, and information regarding how to include ICTs in teaching methods. However, they suggested that schools generate money to buy computers to give students instructional support throughout their programs. The Edo state government's growth strategy includes some significant ICT policy goals. Among the goals were to encourage and support state residents to take an active part in ICT development of hard and software to make sure that data and ICT resources exist to make optimal advancement, to make sure that the LGAs is a knowledge-based and information-driven for economic growth, and to construct a critical threshold of ICT workers that can successfully achieve set goals while being internationally competitive. Even though this is clearly stated, it will take a well-resourced computer education program to accomplish this.

### **Research Questions:**

1. Do sufficient and qualified computer teachers exist in Oshimili North and Oshimili South LGAs of Delta State?
2. Do Oshimili North and Oshimili South LGAs of Delta State have resources for teaching computer science?

### **Methodology**

The research design used in the study was survey type. All junior secondary school principals (administrators) and computer studies teachers in Oshimili North and Oshimili South LGAs made up the study's population. The sample was chosen using a multi-stage sampling method. Using straightforward random sample methods, 30 out of 45 secondary schools were chosen from the two LGAs. Thirty (30) principals and thirty (30) teachers of computer studies were purposefully chosen. Data were gathered using a questionnaire with CTQAQ and TRC. The subject-related resources provided come from the junior secondary school curriculum in the state. Experts in computer education and curriculum studies verified the adequacy of the questionnaire. Frequency counts and simple proportions were used to assess the data collected.

### **Results**

**Research Question 1:** Do sufficient and qualified computer teachers exist in Oshimili North and Oshimili South LGAs of Delta State?

Questionnaires were given to thirty (30) Computer Studies teachers and thirty (30) principals. Fifty-six (56) were retrieved, approximately 93.3% of the administered questionnaire.

**Table 1: Respondents Demographic Information**

Required Information	Classification (N=60)	Frequency	Percentage (%)
Sex	Male	24	40
	Female	36	60
Marital Status	Single	15	25
	Married	45	75
Experience (Years)	≤5	3	5
	6-10	2	3.3
	11-15	8	13.3
	16-20	2	3.3
	21-25	4	6.6
	26-30	11	18.3
	30-35	30	50
	Fulltime	60	100
Employment Status	Part-time	Nil	-
	NYSC	Nil	-

Source: Researcher field survey, (2022)

Data on sex, employment position, marital status, and years of expertise are included in Table 1 as basic demographic information. In addition, 75% are married, compared to 25% as single, and 60% are females while 40% are males. 3.3% of the population in the sample has also taught in secondary schools for 6 to 10 years. This demonstrates that compared to their male counterparts, more women than men were employed as computer teachers in Delta State's Oshimili North and Oshimili South LGAs.

**Table2: Computer Teacher's Quality**

Required Information	Classification(N=60)	Frequency	Percentage
Qualification(s)	NCE	10	16.6
	Degree	50	83.3
	Diploma	Nil	-
Registration with TRCN	Yes	60	100
	No	Nil	-
Is Computer one of the subjects taught in your school?	Yes	51	85
	No	9	15
How many period(s) are for practical in a week	1-2	50	83.3
	None	10	16.6
	≤3	40	66.6
No. of Student to a PC	4-6	18	30
	>6	2	0.3

Source: Researcher field survey, (2022)

The five factors for evaluating a computer teacher's quality are listed in Table 2. As of the study's completion, 83.3% of respondents held degrees, while 16.6% held National Certificates in Education (NCEs). Every one of them is certified as a professional teacher and is registered with the Teachers Registration Council of Nigeria (TRCN).

**Table3: Computer Teachers Adequacy**

Required Information	Classification (N=60)	Frequency	Percentage
Period for computer education per week in a class	≤3	10	16.6
	4-6	24	40
	7-10	26	43.3
Teacher Teaches other Subjects	Yes	42	70
	No	18	30
Qualified Computer Studies Teachers	Yes	60	100
	No	Nil	-

Source: Researcher field survey, (2022)

Table 3 shows that 39.4% of the respondents have computer education between 7 and 10 periods per week for a class, which means that if a school only has one computer studies teacher, they are expected to teach at least 35 times in the junior classes and depending on how often the subject is on the school timetable. In contrast, 59.1% of the respondents have one computer teacher in a class. The lack of sufficient staff to teach the topic in Imo State, Nigeria, was reported by Aboderin and Olukayode (2014). Staff strength is one of the fundamental elements for implementing the Computer Education program effectively. Vanguard learning (2012) claims that some Nigerian students have only ever attended computer lab classes when NYSC volunteers were present to instruct them.

**Research Question 2:** Do Oshimili North and Oshimili South LGAs of Delta State have resources for teaching computer science?

Here, the computer education policy's basic guidelines for teaching computer studies provide for a ratio of one computer to five students. In other words, a class of 40 kids requires a minimum of 8 (eight) computers, along with their peripherals, in every institution.

**Table 4: Teaching Resources Observation**

S/N	Computer Equipment	Computer Equipment Availability	
		Available	Not Available
1	Desktop Computers	48(80%)	12(20%)
2	Laptop Computers	12(20%)	48 (80%)
3	Interactive Training CDs	40(66.6%)	20(33.3%)
4	CD-ROM/Videotapes	58(96.6%)	2 (3.4%)
5	Counters	45(75%)	15(25%)
6	Charts	60(100%)	0(0.0%)
7	Radio	32(53.3%)	28(46.6%)
8	Television	10(16.6%)	50(83.3%)
9	Abacus	6(10%)	54(90%)
10	Slide rule	6(10%)	54(90%)
11	Keyboard	60(100%)	0(0.0%)
12	Mouse	60(100%)	0(0.0%)

13	Printers	22(36.6%)	38(63.3%)
14	Keyboard Tutor	12(20%)	48(80%)
15	Tablet/handheld Devices	4(6.6%)	56(93.3%)
16	Word Processing Software	60(100%)	0(0.0%)
17	Documentary videos	5(8.3%)	16(26.6%)
18	Flash Drives	50(83.3%)	10(16.6%)
19	Sample of BASIC Program installed	28(46.6%)	32(53.3%)
20	Computer systems with graphic packages	32(53.3%)	28(46.6%)
21	Computer Laboratory/Cybercafé	26(43.3%)	34(56.6%)
22	Textbooks(Latest Edition)	34(56.6%)	26(43.3%)

Source: Researcher field survey, (2022)

The percentages associated with the frequency count of schools with available teaching materials are shown in Table 4 above. It demonstrated that most of the sampled schools have desktop or laptop computers. It was found that 90% of schools don't have the abacus, and 90% don't have the slide rule, respectively. The researcher was told they were not made available by the government when they questioned the cause for their absence. From Table 4 above, the study's findings showed that, on average, the schools examined lacked adequate/sufficient resources for teaching computer science. For example, most schools under investigation lacked Abacus (90%), Charts (0%), Mouse (0%), Word Processing Software (0%), etc., and these findings support (Bamidele, 2017). According to Tunde's studies (2019), this doesn't appear true in Sokoto State.

## Conclusion

According to the study, junior secondary schools in Delta State's Oshimili North and Oshimili South LGAs lag significantly in implementing the computer education curriculum due to inadequate computer equipment. As shown in Table 4 above, most available computer science equipment is below the average expectation of at least 50% availability as predicated on the non-readily available educational materials and labour force. According to the study's findings, adequate attention should be paid to computer education in secondary schools if the schools are to achieve their goal of creating a critical mass of ICT professionals and knowledgeable workers who can successfully drive state development objectives while remaining globally competitive.

## Recommendations

The following steps are now advised to effectively implement the Computer Education curriculum in Delta State's Oshimili North and Oshimili South LGAs based on the study's findings:

1. Computer laboratories should be adequately/sufficiently equipped to enhance teaching and learning.
2. It is recommended that more qualified computer teachers be employed.

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